



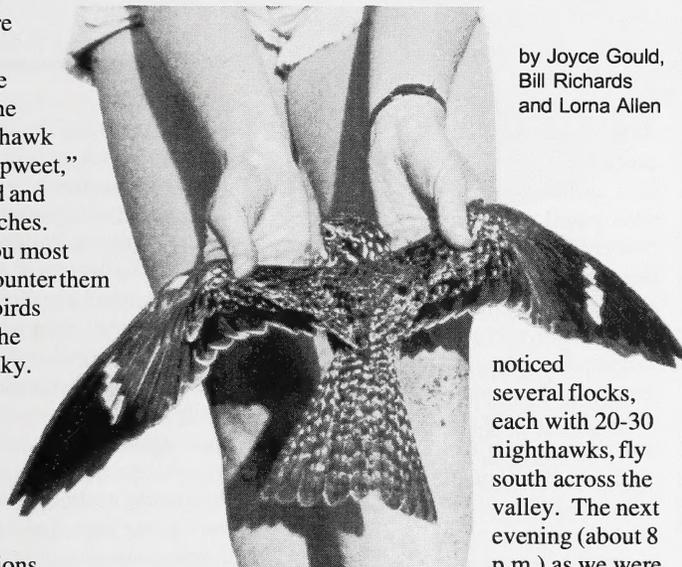
The Natural Areas Program is sponsored by
Alberta Forestry, Lands and Wildlife

Flocks of Nighthawks Chance Encounters or a Regular Phenomenon?

We are sure that most of you are familiar with the common nighthawk with its nasal "pweet," booming sound and white wing patches. And like us, you most frequently encounter them as one or two birds flying around the dawn or dusk sky. Imagine our surprise then to see flocks of several tens of birds on two different occasions.

Our first surprise came on a beautiful mid-August 1991 evening (approx. 7 pm) in Foremost. Here, Lorna and Joyce observed between 50 and 100 birds riding thermals above the town. Neither of us could recall ever seeing this many nighthawks all at once. We both filed this observation in the back of our minds as "interesting" but thought no more about it. That is, until this year (1994).

This second surprise came on another beautiful August evening (August 16, 8 p.m.) in the valley of the Milk River south of Foremost. Bill and Joyce were doing some work in the Milk River Natural Area and



by Joyce Gould,
Bill Richards
and Lorna Allen

noticed several flocks, each with 20-30 nighthawks, fly south across the valley. The next evening (about 8 p.m.) as we were driving between

Red Rock Coulee and Writing-on-Stone Provincial Park, we noticed similar groups.

We now have two observations of flocks of nighthawks in mid-August from the Foremost area. Are these observations two unrelated coincidences or do nighthawks flock during migration? References for Alberta indicate that migrant nighthawk flocks are reported to be rare (Pinel et al. 1993; Semenchuk 1992). Flocks were reported over Sherwood Park in the spring of 1974 and from the Fort McMurray area in the autumns of 1975 and 1976 (Pinel et al. 1993). In

British Columbia, it's a different story: where "spectacular concentrations . . . can be seen in late afternoon and early evening, especially when hawking flying field ants..." (Campbell et al. 1990). The Audubon Society Encyclopedia of North American Birds (Terres 1980) reports "... in fall migration, at times seen in flocks of up to 1000" (p. 633).

Is the scarcity of flocking behaviour records for Alberta the result of a lack of observations or do nighthawks flock here only under certain conditions? Why is flocking common in British Columbia and other parts of North America and not in Alberta? If they do flock here sporadically, what triggers them to do so? Is their flocking triggered by an abundance of food? Do they have staging areas? Our sightings have been from the southeast corner of the province, particularly around Foremost. It appears that the same behaviour can be seen in the Fort McMurray area on occasion. What about other areas of the province?

While driving from Yellowknife to Edmonton several years ago, Lorna has seen many individual nighthawks flying south. This record was from the first week of August. Was it related to our observation of flocks?

We are interested in hearing from you--your thoughts and whether you have observed similar behaviour and where. We will share your observations in a future edition of "The Steward." ▼

Reference List for this article on
page 12

Police Outpost Provincial Park

by Paul McLaughlin

The distinctive monolith of Chief Mountain in Montana watches over Alberta's southernmost provincial park. Police Outpost Provincial Park lies where gentle fescue grasslands transform abruptly into the Foothills Parkland surrounding scenic Police Lake. Police Outpost represents a unique transition zone between the Foothills Fescue and Foothills Parkland Subregions and lies only a few kilometres from Montane coniferous forests to the west. In terms of a natural experience, the park offers its visitors plenty: a very productive fishery with sizable catches of stocked rainbow trout; a bounty of bird species, both resident and migratory; a substantial ungulate population that incorporates the park within its range as does the odd wandering carnivore; and finally great diversity of species in surrounding vegetation, including some of provincial or national significance.

Police Outpost is one of the few protected areas that has both Foothills Parkland and Foothills Fescue vegetation types. Especially unique to the park is the shortgrass fescue vegetation that is represented very little in a protected natural state within the province of Alberta because of cultivation and ranching activities. Being on the margin of the "Crown of the Continent" Ecosystem, the park shares much of that ecosystem's biodiversity. Prolific wetland meadows within the park provide for extreme northern extensions of at least three nationally significant plant species whereas the shortgrass fescue portions of the park contain three provincially significant species. The aspen and willow woodlands of the Foothills Parkland within the park contain at least two other provincially

significant vascular plant species. Thus, the roughly 2 km² of the park represents an important contribution to Alberta's natural heritage as a biologically diverse and significant protected area.

Important initiatives over the past couple of years at Police Outpost involve an active approach to resource management. Initial response assessments at the park acknowledge the need for a program to monitor the rare plant species found here. Over the past two years, a monitoring program has recorded the size of the populations of three plant species of noted national significance in the park. In addition, six other species of provincial significance have been assessed in terms of their current population status and with regard to substantial threats or concerns to their populations. Staff from the Natural Heritage Protection and Education Branch of Alberta Environmental Protection helped with species identification and monitoring strategies. This enterprise has already shown interesting data about population changes over the short duration of the study. It will undoubtedly supply valuable data to aid in future management plans and studies.

Another interesting undertaking at Police Outpost this season involved researching the butterfly species of the park and surrounding area. The study included an assessment of the diversity

■ The Crown of the Continent, formerly known as the greater Waterton Glacier ecosystem, encompasses parts or all of two provinces (Alberta and B.C.), one state (Montana), two national parks, two American national forests and one Canadian grazing reserve. As a peripheral component of this ecosystem, Police Outpost Provincial Park will be managed cooperatively, to accomplish better research and conservation through more effective use of limited human and financial resources.

of butterflies and the correlation of these data with associated flowering plant species diversity. Close associations between butterfly diversity and plant diversity may prove to be valuable indicators of a healthy ecosystem and may contrast with those associations on disturbed ecosystems. Final synthesis of the data is not due until early spring, but analysis looks interesting so far. Such a comparative technique may be valuable for future assessments of ecosystem health and stability by correlating both floral and faunal components of a system.

Our visitor education objectives have been advanced this season by using the abundance of prairie wildflower species in the park as a primary theme. The diversity of ecotypes at Police Outpost lends itself nicely to interpretation. Walking amid the unique shortgrass fescue grasslands has opened many hearts to treasures that visitors had previously overlooked. Exciting new interpretive projects are being developed for next season. We are anticipating many more days of taking groups of people for walks among the wildflowers. ▶

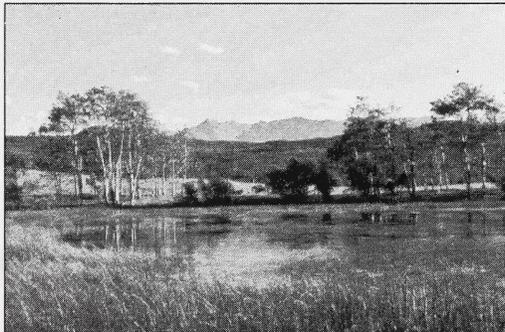


Photo by Barbara Danielson

When is a Northern Leopard Frog Not a Northern Leopard Frog?

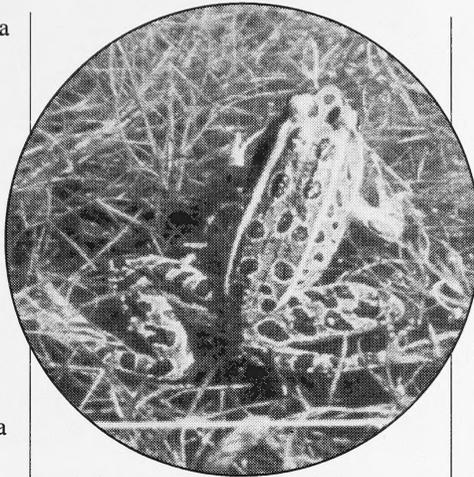
by Bill Richards

On August 10, 1994, natural area staff were conducting a site inspection of large slumps within the Vega Natural Area. Although it is small, this site along the right bank of the Athabasca River is very diverse and relatively lush. However, this story is about what we discovered when we entered the road after checking the site. To the surprise of all of us, there on the wet gravel road was a recently deceased northern leopard frog (*Rana pipiens*). It was obvious that its death had been the result of a hit-and-run driver. It was also obvious that the only vehicle on the road that morning belonged to the Natural Areas Program.

This situation was unfortunate for the frog, but as my mom always said, "There's never a bad wind, that don't blow something good" and in this case it was a range extension for a vulnerable species (see maps). We even have the specimen to prove it.

Our frog was about 6.25 cm (2.5 in.) long, green with dark spots having lighter borders (see leopard frog photo). The specimen we found had no obvious mark through the eyes; even if it had, we would likely have thought that the mark represented tire tracks, because the head had been extremely flattened. Identification seemed undeniable.

It's impossible to truly describe the shock we felt when we received a call from Wayne Roberts, Collections Manager of the Zoological Museum at the University of Alberta, declaring that the specimen we had deposited with him was, in fact, the very common wood frog (*Rana sylvatica*) and not a leopard frog after all!



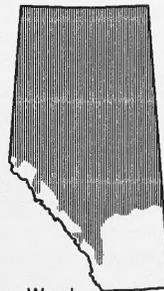
Leopard frog—the real thing

You may ask, "How is it that two biologists and a technologist could misidentify a frog that they held in their hands?" Well, it does happen. A worse scenario would have been to find a live frog and misidentify it before releasing it back to the wilds, so it was never seen again and its identification, unable to be confirmed.

Wayne said he has a very difficult time with records like ours--from an area outside of the frog's known range (see range maps below)



Northern
Leopard
Frog



Wood
Frog

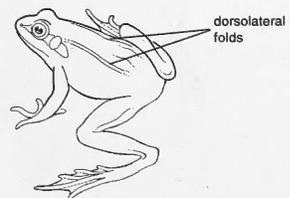
-- when there is no specimen or photograph for verification.

Misidentifications do happen. We would have had even greater difficulty in believing that the frog we saw was not, in fact, a leopard frog, if Wayne had not been able to show us where we had gone wrong in the identification.

Wayne pointed out our mistake, but was still very happy to have the specimen, for without it we could never be sure what we had seen.

Before I tell you where we went wrong, here are a few things to remember. Leopard frogs are typically green, like the frog described above, but occasionally brown ones occur; and the wood frog, though normally brown, may occur with a green skin and may have those dark spots so reminiscent of the leopard frog. The clue to the positive identification is in the exact location of these spots. How can the random placement of patches of dark pigment on the back of a frog help? Well, on leopard frogs these spots "never" cross the dorsolateral fold (see sketch) whereas those spots on the wood frog can cross these lines, and in fact are often concentrated along or encroach upon the folds.

The moral of the story is: When you are sure that you have identified an unusual specimen, look again (or ask an expert) because you can bring a leopard frog to water but you can't change its spots. ▲



Where Do BATS

go in the WINTER?

by M.J. Pybus,
Alberta Fish & Wildlife
Services, Edmonton

In this year of the "endless summer," it was difficult to bring oneself to think of winter and things cold. However, other species had no difficulty in starting to prepare for the change in seasons. In natural areas all across the province, leaves fell, geese and cranes filled the skies, and large ungulates had thoughts only of the rut. Each species of plant and animal has evolved specific survival strategies to deal with the extreme temperatures and reduced food availability associated with winter in Alberta.

Generally, survivors fall into two categories: those that go and those that stay. Most of us are quite familiar with the massive passage of migrating birds that move through the province each fall. Large populations of breeding birds from throughout the Arctic and the boreal forest gather and begin to move southward. Although the fall migration tends to be more dispersed than the spring migration, increased numbers and activity of waterfowl, shorebirds, woodland birds, and large raptors are easy to detect in natural areas throughout Alberta. Woods that were relatively quiet in late summer are suddenly filled with the frenetic avian chatter and flutter of migrating youngsters and adults making their way to neotropical warmth and food. The peaceful quiet of fall marshes, sloughs and lakes is broken by the rush of wind from huge wings and loud voices as thousands of snow, greater white-fronted and Canada geese break formation and come to a gliding halt on the chilled water.

But what of the smaller, less conspicuous species? In particular,

what do bats do when days begin to shorten and light intensity begins to wane? In addition to changing light conditions, bats in Alberta are faced with an even more pressing concern—complete absence of all edible food sources. When was the last time you saw night-flying moths, beetles and mosquitos in Alberta in December?

Faced with such dilemmas, different bat species respond in different ways. However, energy efficiency is a common overlying factor that governs the response. After many years of study, human engineers and physicists learned what common forest-dwelling species such as silver-haired bats (*Lasionycteris noctivagans*) and hoary bats (*Lasiurus cinereus*) have practised for centuries—the aerodynamics of long, pointed wings provide the greatest amount of glide with the least thrust or drag. These bats (as well as terns and albatrosses) have relatively long, narrow wings that are well adapted for rigid flight over long distances. As a result, these species respond to the coming of winter much like many birds; they migrate south, perhaps as far as Arizona and New Mexico. Once there, they hibernate in hollow trees, rock crevices, and mine shafts.

Other bat species, such as little brown bats (*Myotis lucifugus*), long-eared bats (*M. evotis*), and long-legged bats (*M. volans*), also migrate but do not go nearly so far. Their wings are relatively short and wide and thus do not provide the same level of efficiency in flight over long distances. As far as we know, these species generally fly to caves and abandoned mines in Alberta

and Montana, where they can find environmental conditions suitable for hibernation (constant temperature of 1°-5°C, high humidity, no air currents, no disturbance). Here, they enter torpor, a physiological state of maximum energy efficiency. They sleep for prolonged periods (generally from mid-September to late April) with only short interruptions. In addition, their basal metabolism is greatly reduced, their heart rate declines significantly and their body temperature may drop to near freezing temperatures. This reduced physiological state is particularly unusual for a warm-blooded mammal and, although it has been studied extensively, we still do not know exactly how they do it or how such a reduced state is maintained over prolonged periods.

As stated in an earlier article (*The Steward*, Issue #26, Spring 1994), big brown bats (*Eptesicus fuscus*) can withstand a greater range of environmental conditions in their hibernacula. Some may actually move into cities during the fall to hibernate in unused warehouses where temperatures are maintained just above freezing. Other big browns may stay in rural buildings or locations that do not freeze and that provide the other necessary conditions for successful hibernation. However, bats do not hibernate in the same place where they spend the summer. Thus, in terms of the age-old dilemma of whether to stay or go, bats gener-

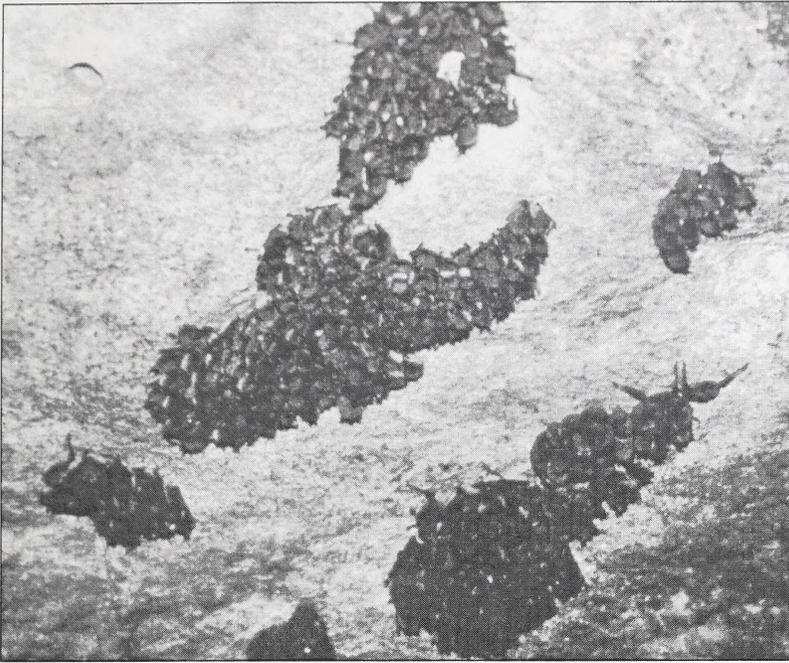


Photo by B. Fenton

ally go. Some go much farther than others!

Hibernating bats are particularly vulnerable. Their stored energy reserves (up to 30 percent of their body weight) will get them through the winter, but only if they remain torpid. Each time a bat is disturbed to the point of arousal (i.e., comes out of its deep sleep), it uses considerable energy to raise its body temperature and heart rate to a level at which it can then move or fly. With the absence of insects in winter, there is no opportunity for the bat to replace the energy used during arousal.

Innate natural arousal occurs occasionally when the environmental conditions of the hibernaculum become unsuitable (e.g., too warm, too cold). You may, then, actually see a bat flying around in the middle of the winter. This built-in survival mechanism allows the bat to sense that its survival is threatened and that it should find a more suitable place to sleep. The disadvantage is

that the bat may be looking for a new place to hibernate when ambient weather conditions can kill it in a short time. Bats generally carry sufficient energy reserves to accommodate such arousals so long as a new hibernaculum is found quickly.

Any additional disturbance, in particular disturbance by people, has the potential to result in depletion of the energy reserves to the point of no return, and the bat will die. Hibernating bats are very aware of their surroundings. When people enter a hibernaculum, they inevitably produce sounds and body heat that cause changes in the microenvironment of the site. Such changes are detected by the sleeping bats and often result in arousal from torpor. For this reason, Alberta's *Wildlife Act* specifically states that it is unlawful to disturb bats (or snakes) in a hibernaculum between September 1 and April 30. There are very few known bat hibernacula in the province, so it is necessary to provide this added

protection during the critical winter period.

Alberta Fish and Wildlife Services is interested in documenting the location of more bat hibernacula. Please contact any Fish and Wildlife office, if you obtain information regarding a possible location, in natural areas or elsewhere (without disturbing the bats, of course).

If you are fortunate enough to have bats in one of your buildings during the summer, take heart. They will return. Each spring, in the beginning of May, a biological clock within each bat will go off and sound the bell for complete arousal. How does a bat that is sound asleep in a pitch-black cave (and has been so for up to seven months) know when it is time to wake up? We have no idea. We do know that it happens; the bats move to the mouth of the cave, test the temperatures and light conditions, and, if there is sufficient food available to make it worthwhile, they will foray out over the countryside once again. Bats have a strong fidelity to their natal roosts and will return to the same summer location year after year.

There is a tremendous interest in bats as evidenced by the recent successful display at the Provincial Museum in Edmonton entitled "Masters of the Night". The display provided general information regarding bats of the world as well as focused on species found in local areas. Over 36,000 school children visited the exhibit and 30 bat houses were constructed at two separate workshops. Positive attitudes toward bats were the order of the day!

CORRECTION

In the last issue of "The Steward" (No. 27) the author of the article "Lakeland-A Vision for the Future" was incorrect. The article was prepared by staff at the Parks Services, Lakeland District Office. My apologies for the confusion. [ed.]

Canadian Biodiversity Strategy

The United Nations Convention on Biological Diversity, which Canada ratified in 1992, led to the recently-released discussion draft entitled *Canadian Biodiversity Strategy*.

The draft strategy proposes an agenda to improve Canada's ability to ensure the long-term productivity, diversity and integrity of our natural systems. Specifically, it proposes the following goals to enhance our capacity to develop sustainably:

- enhance efforts to conserve natural biodiversity and to use our biological resources sustainably, particularly in agriculture, fisheries and forestry;
- undertake an ecological approach to management based on knowledge of ecosystem functioning, comprehensive and reliable biological inventories, information sharing, greater recognition and use of traditional knowledge, and integrated planning systems;
- improve Canadians' understanding of the value of biodiversity and provide citizens with opportunities to help develop and implement land and resource use policies, plans and programs;
- ensure an appropriate mix of legislation and incentives in order to encourage biodiversity-sensitive behaviour; and

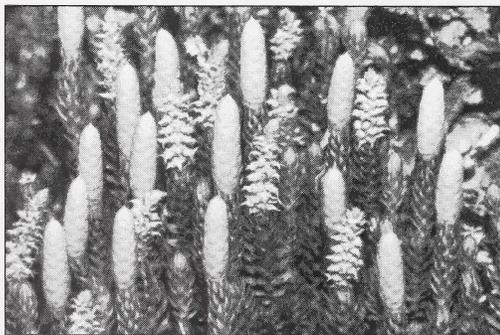


Photo by Charles Truscott

- contribute to biodiversity conservation and sustainable use efforts worldwide.

The draft strategy considers the establishment and management of protected areas to be the second key element to achieving the conservation of biodiversity and the sustainable use of biological resources in Canada.

The Convention defines a protected area as "a geographically defined area which is designated or regulated and managed to achieve specific conservation objectives." Within that definition, protected areas in Canada are managed for various purposes: conservation of species and genetic diversity; maintenance of essential ecological processes and life-support systems; wilderness protection; protection of specific natural and cultural traditional attributes; and the sustainable use of resources from natural ecosystems. Canada's protected areas also provide excellent opportunities for environmental education, outdoor recreation and tourism for Canadians and millions of visitors from other countries.

Just as the purposes of protected areas vary, so do the levels of protection afforded them. In some, access is strictly limited, whereas in others, recreation is encouraged. In still others, certain commercial extractive activities are permitted. Some fulfil more than one purpose and are zoned accordingly for different levels of protection. Although protected areas are essential for the conservation of biodiversity, they must be complemented by environmental conservation and stewardship programs across the entire landscape.

The first protected areas in Canada were established in the late 1800's, in the first decades after Confederation. Today in Canada, federal, provincial and territorial governments, along with individuals and private organizations, acquire and manage lands for conservation.

The World Conservation Union (IUCN) has developed a system for classifying protected areas. According to this system, about 9 percent of Canada would be classified as protected to some degree, whereas only about 4 percent is strictly protected from all commercial extractive activities. The National Conservation Areas Data Base (NCADB), developed by Environment Canada, the Canadian Council on Ecological Areas and others, identifies approximately 3500 government-owned protected areas in Canada, covering about 900 000 km² and approximately 10 000 km² held by nongovernment groups.

Despite the efforts of governments and nongovernment organizations, Canada's networks of ecological reserves, national, provincial and territorial parks, managed wildlife areas, protected landscapes and internationally designated sites are not yet complete. Not all of Canada's ecological regions are represented in the existing protected areas networks, nor are all of the critical wildlife habitats protected. In some regions of the country, opportunities to establish protected areas are being foreclosed.



Photo by Charles Truscott

To respond to the Convention, it is proposed that federal, provincial and territorial governments, in collaboration with affected and interested groups and individuals, undertake the following:

1. Make every effort to complete Canada's networks of protected areas representative of Canada's land-based natural regions by the year 2000 and accelerate the protection of areas representative of Canada's marine and freshwater natural regions.
2. Develop and implement a strategy, including adopting comprehensive criteria, for determining priority sites to conserve and/or sustainably use biodiversity, including: critical wildlife habitat areas; areas supporting species-at-risk; endemic species and ecosystems; areas that contain high diversity; areas required by migratory species; areas that are representative, unique or associated with key evolutionary processes; and areas that support species, communities and genomes or genes of social, scientific or economic importance. Interim protection measures will be sought where necessary, while

protected area status is being discussed.

3. Prepare and implement legislation and policies, inventories, management plans, guidelines and monitoring programs for protected areas.
4. Develop and use sound scientific information and traditional knowledge to select and manage protected areas.
5. Integrate protected areas with sustainable development policies and strategies, so that networks of protected areas are ecologically managed at the landscape level, through designations/mechanisms such as UNESCO Biosphere Reserves that combine core protected areas with developed lands.
6. If conservation of entire ecosystems is no longer possible, then reconnect fragments, provide corridors and protect habitats for individual species or populations, where practical.
7. Develop agreements and other mechanisms with nongovernment organizations, indigenous communities and private landowners to establish protected areas. ◀

Biodiversity Definition

The United Nations Convention on Biological Diversity defines biological diversity ("biodiversity") as "the variability among living organisms from all sources including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; and this includes diversity within species, between species and of ecosystems."

The Convention on Biological Diversity

The Convention on Biological Diversity was negotiated to coordinate the international action that is necessary to address the crisis of worldwide biodiversity loss, one of the most significant threats facing the global environment. It was negotiated in preparation for the United Nations Conference on the Environment and Development in June 1992.

Canada signed the Convention at the Earth Summit in June 1992 and in December 1992 was the first industrialized country to ratify it. The Convention came into force in December 1993 when a sufficient number of countries ratified it. To date, more than 50 countries have ratified the Convention.

The objectives of the Convention are:

- the conservation of biological diversity;
- the sustainable use of biological resources; and
- the fair and equitable sharing of the benefits arising from the use of genetic resources.

Habitat, a Place for Wildlife

The Buck for Wildlife Program conserves and enhances important habitat for wildlife and fish throughout Alberta.

Habitat is the unique combination of food, water, shelter and space that fish and wildlife need to survive. In many areas of Alberta, habitat is being altered, or lost to agricultural activities, forestry development, urban expansion, industrial development, recreational activities and uncontrolled access.

Because of public concern over the loss of fish and wildlife habitat, the Buck for Wildlife Program was initiated in 1973.

The Buck for Wildlife Program is administered by Alberta Fish and Wildlife Services but is funded entirely from tax deductible donations and a special levy attached to the sale of Alberta hunting and fishing licences. Buck for Wildlife conserves and enhances habitat through hundreds of habitat improvement projects proposed by individuals, clubs, organizations and government agencies. Since Buck for Wildlife was introduced in 1973, \$20 million has been spent on over 1000 projects to improve habitat for fish and wildlife.

Some of the habitat improvement techniques that Buck for Wildlife uses include the following:

Shelterbelt Planting

Shelterbelts provide basic food sources, cover, breeding territories, and travel corridors for many wildlife species. They are created by multi-row and clump plantings of various types of trees and berry-producing shrubs.

Water Impoundment

Dams, dykes, weirs and control gates are used to create bodies of



open water or to improve the amount and availability of water in existing lakes and ponds throughout the year.

Controlled Burning

This technique is effective in controlling tree encroachment and revitalizing grasslands important to bighorn sheep and elk. In forested areas, burning is used to promote shrub growth for browsers such as moose and deer.

Shoreline and Streambank Protection

Sensitive shoreline and streambank areas can deteriorate through livestock grazing or erosion. Fencing can protect shorelines and streambanks without restricting wildlife use of watering areas.

Nesting Cover and Forage

A mixture of grasses and legumes

can be planted by a water body to provide habitat for nesting ducks and geese. It also enhances an area for ground-dwelling birds such as pheasants, sharp-tailed grouse, small mammals and numerous songbirds. When located next to tree cover, the vegetation mixture provides good quality forage for deer and elk during the winter months.

Habitat Retention

Because much of Alberta's wildlife habitat is on privately owned land, Buck for Wildlife encourages landowners to preserve and enhance valuable wildlife habitat on their lands through good land management practices. These practices include rest/rotation grazing, selective hay cutting, and soil conservation strategies in the agricultural community.

In addition to its habitat improvement projects, the Buck for Wildlife Program has secured over 90 sites for Albertans to visit and explore. These properties, located throughout the province, feature a number of different habitat areas and provide opportunities for wildlife viewing, hunting, fishing, hiking and photography. These sites can also offer individuals and various groups the opportunity to become actively involved in enhancing and protecting these important wildlife habitat areas. The Buck for Wildlife Program is seeking individuals and organizations to assist in the management and maintenance of these sites as volunteer stewards.

This pilot project is modeled closely after the Natural Areas Volunteer Steward Program. It has different objectives and goals and will be administered and managed by Fish and Wildlife Services.

The following Buck for Wildlife properties offer opportunities for volunteer stewardship.

Buffalo Lake

One of Buck for Wildlife's first habitat enhancement projects, this 324-hectare parkland at Buffalo Lake serves as winter range for deer and a rest stop for migrating waterfowl. Habitat enhancement throughout the area provides food for deer and cover for pheasants and song-birds.

Slack Slough

This marsh, south of Red Deer, raises thousands of waterfowl annually and hosts hundreds of swans and shorebirds on migration. A viewing platform helps visitors see how nest islands, nest structures, fencing and shelterbelts enhance this area.

Chip Lake

Five properties representing parkland, boreal forest, pastures and shoreline are located at this lake. Habitat improvement focused on improving nesting conditions for waterfowl near the shores of the lake.

Lychak

This 777-hectare property, between Two Hills and St. Paul, is a wildlife haven for deer and upland birds. It consists of aspen forest and rangelands in a predominantly agricultural area. Shelterbelts and nesting cover are some of the habitat enhancement measures taken here.

Daysland

This key wildlife habitat area covering 388 hectares is made up of cropland, pastureland, sloughs, low wetlands and aspen forest. The establishment of shelterbelts, seeding of grasses and legumes, and the development of wetlands provides nesting cover, food sources and shelter for waterfowl, upland birds and deer.

Lac Cardinal Point

This first-rate wildlife refuge and recreation area is located on a peninsula of Cardinal Lake. Over 160 hectares of marshes, forests, shrubland, and cultivated lands provide habitat for a variety of wildlife species and opportunities for wildlife viewing, photography and hunting. Enhancement of this site includes wetland development, shelterbelt planting and the seeding of nesting cover for various bird species.

McVinnie

On this property, a 5-hectare trout pond and 60 hectares of wetland and upland habitat, provide a place to fish for trout and to view wildlife such as pheasants, deer, waterfowl and nongame species. Wetland development, trout pond construction, shelterbelt planting, and seeding of grasses and legumes were undertaken at this site.

Municipal District of Peace Ponds

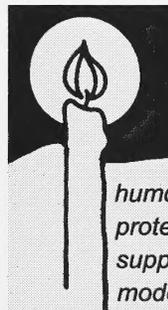
Buck for Wildlife and a local service club developed these two 2-hectare ponds near Peace River. One pond is stocked with rainbow trout, the other with Arctic grayling. This site offers a unique opportunity for volunteer stewards to get involved with the maintenance of a grayling spawning site.

Tyrrell-Rush Lakes

This site was the first project to be completed under the Wetlands for Tomorrow Program, which was jointly administered by Buck for Wildlife and Ducks Unlimited. The Tyrrell-Rush Lakes are two of the most important wetland habitats in the province. At this site, 266 hectares of wetland basins, and 81 hectares of upland nesting cover are maintained for waterfowl production and upland bird winter habitat.

Volunteer stewards at Buck for Wildlife projects visit and inspect the sites, participate in the development of site management plans, and undertake habitat enhancement and maintenance projects at the site.

If you or your group are interested in becoming a Buck for Wildlife volunteer steward, please contact your nearest Fish and Wildlife Services Office for more information. ▶



*Stewards will be saddened to learn of the death, on December 6, of **Barry Jenkins**, a Past President of the Wagner Natural Area Society.*

Family and friends will miss his good humour and warmth, and Alberta's protected areas have lost a staunch supporter. Barry provided an exceptional model for us all.

Natural Regions of Alberta Poster Series

by Brian J. Ogston

This series presently consists of five posters depicting the major natural regions found in Alberta—Rocky Mountains, Central Foothills, Northern Forests, Aspen Parkland and the Grasslands. A sixth natural region occurs in the northeast corner of the province—the Canadian Shield. A poster for this region is planned.

These full-colour reproductions of hand-painted originals illustrate what each region might have looked like before man had any influence on them. The posters are representations of the natural regions, but given the vastness of such areas, they may “truly” represent only one small part.

These posters are designed for use by teachers and youth group leaders but are available for anyone. They can be purchased from the Alberta Parks Services.

These “educational” posters take considerable licence. The amount of wildlife shown would never be found in such a confined area or as close to each other as on the poster. The posters also depict geological and, in some cases, weather patterns that have helped shape these special areas. Each poster reflects a particular season, again to help students understand the dynamic nature of our ever-changing landscapes.

The Rocky Mountains

This poster illustrates the drastic change in type of vegetation from the valley floor to the highest of elevations. It also shows the effects of glaciation and water erosion. The poster depicts some of the animals unique to this region and shows the Rocky Mountains during the summer.

The Central Foothills

This poster represents the fall season in the foothills region for an area just slightly north of Nordegg. The prominent feature on the poster is of a river floodplain as it emerges from the mountains. Sediment deposits, the effects of the floodplain on the growth of vegetation and some of the commoner animals associated with this region.

Northern Boreal Forest

This poster features two different wetlands common to this area of the province and also illustrates forest succession. The wide variety of animals and plants found in this ecoregion during the summer is displayed.

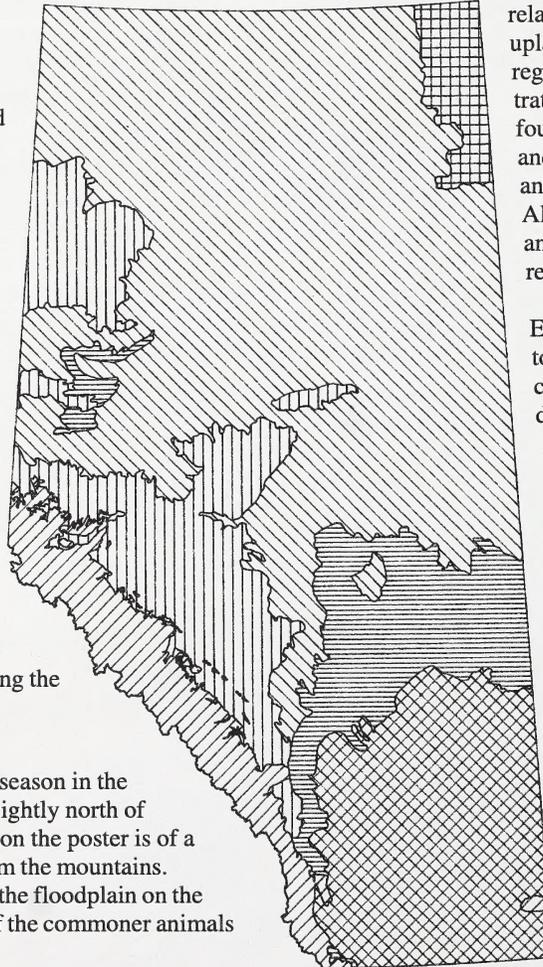
Aspen Parkland

This poster is set in the early fall and illustrates the balance between the aspen forests and the grasslands. Species of animals common to one or both areas are shown. Another feature is how the ecosystem converts decaying vegetation into humus.

Grasslands

The latest poster in this series shows the native grassland of Alberta during the summer. The relatively flat and barren-looking uplands that dominate this natural region are profiled. This poster illustrates the unique geological formations found in this region such as hoodoos and oxbow lakes. Some unusual animals, not often associated with Alberta, are shown—the scorpions and rattlesnakes that live in this region.

For more information, contact the Environmental Education Coordinator at (403) 427-7009. This number can be reached toll free in Alberta by dialing 310-000. ◀



Canadian Shield



Boreal Forest



Foothills



Rocky Mountains



Parkland



Grassland

Site Activities

June 1 to October 26, 1994

A regular feature to keep volunteer stewards and interested individuals informed of activities occurring on our sites.

Astotin:

- signs replaced and fence repaired

Aurora:

- management plan approved

Battle Lake South:

- seismic program approved

Beaver Lake:

- seismic program approved

Bleak Lake:

- seismic program approved

Brazeau Tufa:

- seismic program rejected

Buffalo Trail:

- seismic program approved

Cardinal Divide:

- access management plan approved

Crowsnest Lake:

- easement for fibre optic line approved

Dickson:

- seismic program approved

Eagle Nest:

- provisional road plan registered

Easyford Creek:

- provisional road plan registered

George Lake:

- mechanical vegetation control along power line approved

George Lake Area:

- seismic program approved

Helina Area:

- seismic program approved

Holmes Crossing:

- weed control program approved

Hondo:

- seismic program approved

Irish Creek:

- two seismic programs approved

Lake of the Falls:

- Junior Forest Wardens scheduled cleanup of site

Landslide Lake:

- Junior Forest Wardens scheduled cleanup of site

Macintosh Lake:

- seismic program approved

Manly Corner:

- wellsite and access road approved

Marshybank:

- seismic program rejected

Medicine Lodge Hills:

- off-highway vehicle use of site reported
- access control posts and signs installed

Milk River:

- annual report of Management Advisory Committee published

Mount Livingstone:

- seismic program rejected

Muskiki Lake:

- seismic program approved

Noel Lake:

- brush control along fenceline approved

North Cooking Lake:

- dumping of garbage reported
- weed control (tansy, carragana) completed
- signs replaced
- damage to fence reported

Old Canoe Island:

- seismic program approved

Oxville:

- fire burned a large portion of the site

Paintearth Coulee:

- seismic program rejected
- grazing lease renewed

Pine Sands:

- seismic program approved

Pouce Coupe:

- seismic program rejected

Saskatoon Mountain:

- seismic program approved
- miscellaneous lease approved for tower site
- provisional road reservation registered

Sherwood Park:

- bird-viewing platform installed parking and staging area redesigned

Silver Valley:

- seismic program rejected

Telfordville:

- weed control (scentless chamomile) completed

Torlea:

- seismic program approved

Upper Bob Creek:

- open house for management plan (Sept. 15/94)

Wagner:

- problem beaver dam and lodge removed

Wahstao:

- seismic program approved
- pipeline approved

Washout Creek:

- pipeline approved

White Earth Valley:

- application to develop equestrian/wagon trail received

Whitcourt:

- mineral surface lease on reclaimed borrow pit approved

Whitcourt Mountain:

- miscellaneous lease for radio tower approved.

Yamnuska:

- surface materials lease approved

Return Address:
Natural Areas Branch
10405 Jasper Avenue
8th Floor, Standard Life Building
Edmonton, Alberta
T5J 3N4



Coming Events

Conferences

January 21 to 22, 1995

Federation of Alberta Naturalists
Workshops and Annual General Meeting,
Edmonton

For more information call Ingrid Ektvedt at 283-3392.

February 23 to 26, 1995

Fourth Prairie Conservation and
Endangered Species Workshop, Lethbridge
Conference theme is "Sharing the Prairies: Sustainable Use
of a Vulnerable Landscape." Registration is \$25 (\$15 for
students). Lunches and banquet extra. For information
contact the Institute for Renewable Resource Management,
Lethbridge Community College, 403-382-6971.

March 25-26, 1995

ANPC Workshop and AGM,
Rocky Mountain House

Contact Darrell Smith, 845-8250 (w) or 845-5683 (h).

Environmental Studies Courses

Land Reclamation of Mines -
a Mountain and a Prairie Example
Native Environmental Beliefs
Plants and Animals of Alberta

Contact Grant MacEwan Community College,
Edmonton 497-5333 for location, time and
details.

Strathcona Natural History Club

Field Trip (call Cathy Bernier at 464-3823 for more info)

January 21, 1995 at 9:00 a.m.

Ski the Moraine

Bring cross-country skis and warm clothes to Cooking
Lake/Blackfoot Recreational Area (on Range Road 210,
half mile south of Township Road 524). The recreation
area provides great opportunities to get close to nature and
really see how other species live. John Rintoul will lead the
trip and interpret snow signs that tell marvellous tales of
creatures in winter. Meet at the Waskehegan trail head.

Other trips planned in 1995: February 18 - Snowshoes,
dog sleds and furbearers; March 18 - Owl Prowl; April 15 -
Bird Migration at Beaverhill Lake; May 20 - Frogs and
Kids and Spring; June 17 - Canoe and Picnic at Ministik
Lake. Details provided next year!

Reference List for Flocks of Nighthawks (page 1)

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Pinel, H. W., W. W. Smith and C. R. Wershler. 1993. Alberta. Birds, 1971-1980.
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Paper No. 20. Provincial Museum of Alberta. Edmonton, Alberta.

Sadler, T. S. and M. T. Myres. 1976. Alberta Birds, 1961-1970, with particular
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Terres, John K. 1980. The Audobon Society Encyclopedia of North
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